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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,571	04/25/2002	Hiroaki Kitano	KAK-004	5012
23353	7590	03/09/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			ZHU, JERRY	
			ART UNIT	PAPER NUMBER
			2121	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/018,571	KITANO ET AL.	
	Examiner	Art Unit	
	Jerry Zhu	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Amendment

The amendment dated on April 25, 2002 has been received and acted upon.

Claim Objections

Claims 5-⁹~~8~~, 11 objected to under 37 CFR 1.75(c) as being in improper form because of multiple dependent claims 5-⁹~~8~~, 11. See MPEP § 608.01(n).

Accordingly, the claims 5-⁹~~8~~, 11 not been further treated on the merits.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

the invention as disclosed in claims 1-4 and 10 is directed to non-statutory subject matter.

1. Claims 1-4 are method claims whose steps are not practiced on a computer, electronic devices, electrical machines, mechanical apparatus, or anything concrete and tangible instruments or equipments. These steps are just abstract procedures manipulating abstract concepts. Therefore, it is clear that these claims are not limited to practice in the technological arts. On that basis alone, they are clearly nonstatutory.

Claim 10 uses memory means and means to execute method claims 1-4. However, merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. The examiner believes that method claims would be executed by using pencil and paper in its simplest case without necessarily using a computer. For example, calculating the interaction between three genes using Boolean network algorithm can be performed manually without a computer. Therefore, a machine, such as a programmed computer, is not required to perform the steps of the claims.

Furthermore, a statutory "process" or "method" is not limited to the means used in performing it. See **Cochrane v. Deener**, 94 U.S. at 787-99; **In re Prater**, 415 F.2d 1378, 1388, 159 USPQ 583, 592 (CCPA 1968) ("[A] process is not limited to the means used in performing it." (Emphasis omitted.)). The means to perform a method does not change the nature of patentability of the method. Using a computer as an alternative to perform algorithm computation neither innovates the computer nor changes the nature of the method. Therefore claims 10 are rejected on the same reject rationale rejected as cited for claims 1-4.

2. Regardless of whether any of the claims are in the technological arts, claims 1-4, 10 are just manipulating abstract ideas. Congress intended statutory subject matter to 'include anything under the sun that is made by man.'

Diamond v. Diehr, 450 U.S. at 182, 209 USPQ at 6. "This Court has undoubtedly recognized limits to §101 and every discovery is not embraced within the statutory terms. Excluded from such patent protection are laws of nature, physical phenomena and abstract ideas." *Id.* at 185, 209 USPQ at 7. A claim that covers any and every possible way that the steps can be performed is a disembodied "abstract idea" because there is no particular implementation of the idea. See *Gottschalk vs. Benson*, 409 U.S. at 68, 175 USPQ at 675 (The Supreme Court discussed the cases holding that a principle, in the abstract, cannot be patented and then stated: "Here is the 'process' claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion. The end use may ... be performed through any existing machinery or future-devised machinery or without any apparatus.")

Furthermore, in the case *In re Warmerdam*, the Federal Circuit held that:

...[T]he dispositive issue for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond simply manipulating 'abstract ideas' or 'natural phenomena' ... As the Supreme Court has made clear, '[a]n idea of itself is not patentable, ... taking several abstract ideas and manipulating them together adds nothing to the basic equation. In re Warmerdam 31 USPQ2d at 1759 (emphasis added).

Since the Federal Circuit held in *Warmerdam* that this is the “dispositive issue” when it judged the usefulness, concreteness, and tangibility of the claim limitations in that case. Examiner in the present case views this holding as the dispositive issue for determining whether a claim is “useful, concrete, and tangible” in similar cases. Accordingly, the Examiner finds that the method claims manipulate a set of abstract ideas such as “network,” “elements,” and “data.” (i.e., what kind of network it is? Are they network of people, network of computers, or network mathematic algorithms? Clearly, a claim for constructing network structure using candidate networks is provably even more abstract (and thereby less limited in practical application) than pure “mathematical algorithms” which the Supreme Court has held are per se nonstatutory - in fact, it *includes* the expression of nonstatutory mathematical algorithms. Since the claims are not limited to exclude such abstractions, the broadest reasonable interpretation of the claim limitations includes such abstractions. Therefore, the claims are impermissibly abstract under 35 U.S.C. § 101.

3. Regardless of whether any of the claims are abstract nor not, none of them is limited to practical applications in the technological arts. There is no physical transformation either inside or outside of a computer as the result of performing the method. Examiner finds that *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) controls the 35 USC §101 issues on that

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point for reasons made clear by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir. 1999). Specifically, the Federal Circuit held that the act of:

...[T]aking several abstract ideas and manipulating them together adds nothing to the basic equation. *AT&T v. Excel* at 1453 quoting *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994).

Examiner finds no evidence in the claims that networks and corresponding parameters relate to any concrete, tangible, practical, chemical, physical, or business transformation.

Examiner bases his position upon guidance provided by the Federal Circuit in *In re Warmerdam*, as interpreted by *AT&T v. Excel*. This set of precedents is within the same line of cases as the *Alappat-State Street Bank* decisions and is in complete agreement with those decisions. *Warmerdam* is consistent with *State Street*'s holding that:

Today we hold that *the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price*, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces 'a useful, concrete and tangible result' -- *a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades*. (emphasis added) *State Street Bank* at 1601.

That case later eliminated the “business method exception” in order to show that business methods were not per se nonstatutory, but the court clearly *did not* go so far as to make business methods *per se statutory*. A plain reading of the excerpt above shows that the Court was *very specific* in its definition of the new *practical application*. It would have been much easier for the court to say that “business methods were per se statutory” than it was to define the practical application in the case as “...the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price...”

Additionally, the court was also careful to specify that the “useful, concrete and tangible result” it found was “a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” (i.e. the trading activity is the further practical use of the real world monetary data beyond the transformation in the computer - i.e., “post-processing activity”.)

Applicant cites no such specific results to define a useful, concrete and tangible result. Neither does Applicant specify the associated practical application with the kind of specificity the Federal Circuit used.

Assuming that the claims fall within the category of a "process" under §101, the steps are so broadly recited, without regard to any tangible way of implementing them, that they are directed to the "abstract idea" itself and the claims are nonstatutory subject matter under the "abstract idea" exception. The abstract ideas comprising the steps are not instantiated into some specific physical implementation. Nor are there any minor physical acts, such as recording, that might be construed as an implementation of the abstract idea.

Where a claim is broad enough to read on both statutory subject matter (machine implementation or physical transformation of physical subject matter) as well as nonstatutory subject matter (an abstract idea), the best position is to hold the claimed subject matter to be nonstatutory because, while a claim is pending and can be amended, a claim's meaning should be delimited by express terms rather than claim interpretation. *Cf. In re Lintner*, 458 F. 2d 1013, 1015, 173 USPQ 560, 562 (CCPA 1972) ("Claims which are broad enough to read on obvious subject matter are unpatentable even though they also read on non-obvious subject matter.").

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4. To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. 101 above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Koza, U.S. Patent #5,136,686 (Koza). Specifically,

Claims 1-4

6. (claim 1) Koza teaches a method (abstract, lin.1-4) (a process consisting of series of steps is considered as a method), which estimates candidate networks (abstract, lin.3-4. Problem solving entities are considered as candidate networks.) that are descriptive of relationships between interrelated elements as a network and that are capable of reproducing data (It is inherent that networks are interconnected elements and are capable of generating data.). The method has following steps:
- obtaining a plurality of candidate networks (col.92, lin.25-28, Having is obtaining and programs of various sizes and structures are considered as networks that are arrangement of functions. Genes have functions and network of genes are network of functions.) by producing a

network structure. (col.92, lin.49-58, A new program is a new network structure.)

- (claim2) Reproducing all of the network structures (col.92, lin.49-50) capable of reproducing data given (col.92, lin.33-38. All newly produced networks can be executed to produce data to be evaluated how close to the data given.).
- (claim 3) selecting a network structure capable of reproducing data given (col.92, lin.39-45. The selected networks can generate data that are close to data given.).
- (claim 4) producing a network structure (col.92, lin.49-50) that reproduces, at a high frequency, data having a low margin of error with data given (col.92, lin.33-38; The newly produced network can be executed to produce data with low margin of error corresponding to sample data.)
- Narrowing down an appropriate candidate network from obtained networks (col.92, lin.39. Selecting is narrowing down.) using newly generated data (col.92, lin.33-38. Executing the program to generated data for selection).

Claim 10

7. Koza teaches a network apparatus, (col.1022, lin.55. A computer is a apparatus.) which estimates candidate networks (abstract, lin.3-4) that are descriptive of relationships between interrelated elements as a network and

that, when data generated by the elements are given, are capable of reproducing from the data given (rejection is in the same line as claim 1), comprising:

- First memory means for storing a network (col.102, lin.56-57, programs are network structures) that configures a network structure and corresponding parameter set; (col.102, lin.62-64. Executing a program could include configuring the structure and setting parameters.)
- Second memory means for storing a network structure and corresponding parameter set as a final candidate;(col.103, lin.4-10, select and store at least one final structure to memory means)
- Means for producing a network structure, (col. 103, lin.16) which may allow for reproduction of the data given, and corresponding parameter set, obtaining and storing in said first memory means a plurality of candidate networks; (col.102, lin.26-29)
- Means for narrowing down and storing in the second memory means an appropriate candidate network from networks stored in the first memory means using other data that can be generated from a network and that differs from the obtained data. (col.103, lin.4-10; selection can be performed by comparing newly generated data with data of stored networks)

Conclusion

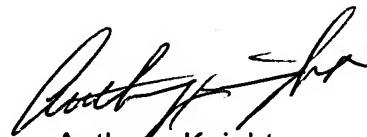
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Zhu whose telephone number is (571) 2724237. The examiner can normally be reached on 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jerry Zhu
Examiner
Art Unit - 2121
Friday, March 04, 2005



Anthony Knight
Supervisory Patent Examiner
Tech Center 2100